Amendments to the Claims

1. (Previously presented) A method of optically routing packets, comprising the steps of:

a first step of impressing onto an optical communication path packet signaling information for a first packet on a signaling optical signal having a signaling wavelength within a first silica fiber transmission band;

a second step of impressing onto said optical communication path a data payload for said first packet on a first optical signal having a first wavelength within a different second silica fiber transmission band;

detecting from said optical communication path said signaling optical signal; and

based upon said detecting spatially switching said first optical signal without converting it to electrical form.

2. (Previously presented) The method of Claim 1, further comprising:

a third step of impressing onto said optical communication path packet signaling information for a second packet on a second optical signal having said signaling wavelength;

a fourth step of impressing onto said optical communication path a data payload for said second packet on a second optical signal having a second wavelength different from said first wavelength within said second silica fiber transmission band; and

based upon said detecting step spatially switching said second optical signal without converting it to electrical form.

3. (Original) The method of Claim 2, wherein said first and third impressing steps include impressing first and second RF signals upon said second optical signal.

4. (Currently amended) A method of optically routing packets <u>in an asynchronous</u>

network, comprising the steps of:

at a first time, impressing onto an optical transmission path packet signal information for a first packet on a first optical signal having a first wavelength;

at a second time later than said first time by a predetermined time difference, impressing onto said optical transmission path a data payload for said first packet on a second optical signal having a different second wavelength;

detecting from said optical transmission path said first optical signal at a time asynchronous to the impressing at the first time;

processing said detected first optical signal to determine a switching path, wherein said processing may be performed within a time period of no more than said time difference; and

switching said second optical signal according said determined switching path without converting it to electrical form.

5. (Previously presented) The method of Claim 4, wherein said first and second wavelengths are in different silica transmission bands.

6. (Original) The method of Claim 4, wherein said first and second wavelengths are in a same silica transmission band.

7. (Previously presented) A method of optically routing packets, comprising the steps of:

a first step of impressing upon an optical transmission path a multi-wavelength signal comprising a plurality of optical data channels of different first optical wavelengths, each of said channels carrying a sequence of packet payloads;

a second step of impressing upon said optical transmission path an optical control signal containing directional information for switching of all of said packet payloads and carried at a second optical wavelength different from said first optical wavelengths;

at a receiving end of said optical transmission path connected to one input of a two-

output multi-mode interference filter, detecting from a first output of said multi-mode interference filter said optical control signal; and

based upon said directional information, switching said packet payloads from a second output of said multi-mode interference filter in different spatial directions without converting said multi-wavelength signal to electronic form.

8. (Previously presented) The method of Claim 7, wherein said second impressing step comprises impressing a plurality of electrical subcarrier signals upon said optical control signal.

9. (Original) The method of Claim 7, wherein said first optical wavelengths are in a first transmission band of a silica fiber and said second optical wavelength is in a second transmission band of said silica fiber other than said first transmission band.

10. (Original) The method of Claim 7, wherein said first and second optical wavelengths are within a single transmission band of a silica fiber.

11. (Original) The method of Claim 7, further comprising delaying said multi-wavelength signal prior to said switching step without similarly delaying said optical control signal.

12. (Currently amended) An optical packet switching method performed at each of a plurality of nodes in a network, comprising the steps performed at one such node of:

detecting a label portion of a packet impressed as an optical control signal on an optical transmission path at a first optical wavelength;

processing said detected optical control signal to determine a switching path to a selected transmission path to a corresponding to a selected one of said nodes for said packet; and

based upon said switching path switching a data portion of said packet impressed on a selected [[one]] second optical wavelength of a plurality of optical data channels of different

second optical wavelengths impressed on said optical transmission path without converting said packet data portion to electronic form, wherein said second optical wavelengths are different from said first optical wavelength and wherein said selected [[one]] second wavelength is selected according to information contained in said label portion.

13. (Original) The method of Claim 12, wherein said transmission path comprises silica fiber.

14. (Previously presented) The method of Claim 13, wherein said first optical wavelength is included within a first transmission band of said silica fiber and said second optical wavelengths are included within a different, second transmission band of said silica fiber.

15. (Original) An optical packet transmission method, comprising:

impressing upon an optical transmission path a plurality of data portions of a plurality of packets at selected ones of a plurality of first optical wavelengths; and

impressing upon said optical transmission path a plurality of label portions of said plurality of packets at a second optical wavelength different from said first wavelengths.

16. (Original) The system of Claim 15, wherein said optical transmission comprises a silica fiber.

17. (Original) The system of Claim 16, wherein said first optical wavelengths are within a first transmission band of said silica fiber and said second optical wavelengths is within a different, second transmission band of said silica fiber.

18 – 20. (Canceled)

21. (Previously presented) The method of claim 1, wherein said first and second silica

fiber transmission bands are separated by absorbing wavelengths for which silica fiber exhibits sufficiently large absorption to prevent usage of said silica fiber for communication.

22. (Previously presented) The method of claim 21, wherein said first and second silica fiber transmission bands respectively include different ones of 805nm, 1310nm, and 1550nm.

23. (Previously presented) The method of claim 5, wherein said different silica transmission bands respectively contain different ones of 850nm, 1310nm, and 1550nm.

24. (Previously presented) The method of claim 9, wherein said first and second transmission bands respectively contain different ones of 850nm, 1310nm, and 1550nm.

25. (Previously presented) The method of claim 14, wherein said first and second transmission bands respectively contain different ones of 850nm, 1310nm, and 1550nm.

26. (Previously presented) The method of claim 17, wherein said first and second transmission bands contain different ones of 850nm, 1310nm, and 1550nm.